

**IN THE DRAWINGS:**

Please correct Figures 3A and 4A, pursuant to the attached Request for Approval of Drawing Corrections.

**IN THE CLAIMS:**

Please amend claims 5-6, 8, 10, 12-15, 17, 19 and 21-23 as follows:

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5. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

- adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;
- carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; and
- carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in a reducing atmosphere.

6. (Amended) A method according to claim 5, wherein the second heat treatment is conducted in a furnace [annealing].

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8. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

- adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;
- carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; and
- carrying out a second heat treatment for the crystalline semiconductor thin film in a reducing atmosphere [including] containing a halogen element.

B3 10. (Amended) A method according to claim 8, wherein the second heat treatment is conducted in a furnace [annealing].

12. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; and

patterning the crystalline semiconductor thin film into at least one crystalline semiconductor island to form at least a channel formation region; and

carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in a reducing atmosphere

B4 13. (Amended) A method according to claim 12, wherein [the second heat treatment is carried out at a temperature of 900 to 1200°C] the second heat treatment is carried out in the reducing atmosphere in which a concentration of oxygen or an oxide compound is not higher than 10 ppm.

14. (Amended) A method according to claim 12, wherein the second heat treatment is conducted in a furnace [annealing].

15. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; [and]

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Cont.

patterning the crystalline semiconductor thin film into at least one crystalline semiconductor island to form at least a channel formation region; and  
carrying out a second heat treatment for the crystalline semiconductor thin film in a reducing atmosphere [including] containing a halogen element.

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17. (Amended) A method according to claim 15, wherein the second heat treatment is conducted in a furnace [annealing].

19. (Amended) A method of fabricating a semiconductor device including a thin film transistor, wherein the thin film transistor is formed through the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

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carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light;

selectively providing the crystalline semiconductor thin film with an element of group VA;

carrying out a second heat treatment to getter the catalytic element into a region of the crystalline semiconductor thin film selectively provided with the element of group VA;

patterning the crystalline semiconductor thin film into at least one crystalline semiconductor island to [become] form at least a channel formation region by removing at least the region of the crystalline semiconductor thin film selectively provided with the element of group VA; and

carrying out a third heat treatment for the at least one crystalline semiconductor island at 900 to 1200°C in a reducing atmosphere.

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21. (Amended) A method of fabricating a semiconductor device including a thin film transistor, wherein the thin film transistor is formed through the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light;

introducing phosphorus into the crystalline semiconductor thin film to form in the crystalline semiconductor thin film a source region and a drain region containing the phosphorus in the source region and the drain region;

carrying out a second heat treatment to getter the catalytic element into the source region and the drain region; and

carrying out a third heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in a reducing atmosphere.

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cont.  
22. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; and

carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in an atmosphere containing hydrogen therein.

23. (Amended) A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the amorphous semiconductor thin film into a crystalline semiconductor thin film by irradiating an ultraviolet light or an infrared light; and

carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in an atmosphere containing ammonia therein.

Please add new claims 24-35 as follows:

24. A method according to claim 5 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
25. A method according to claim 8 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
26. A method according to claim 12 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
27. A method according to claim 15 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
28. A method according to claim 19 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
29. A method according to claim 21 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
30. A method according to claim 22 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
31. A method according to claim 23 wherein said semiconductor thin film comprises  $\text{Si}_x\text{Ge}_{(1-x)}$  ( $0 < x < 1$ ).
32. A method according to claim 19 wherein said semiconductor device is an active matrix type EL display device.
33. A method according to claim 21 wherein said semiconductor device is an active matrix type EL display device.